

PRECIPITATIONS ANALYSIS IN THE NORTH-WEST OF ALGERIA – IMPACT ON THE CEREAL FARMING PRODUCTION

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Abstract:

Algeria and especially the West, had known several droughts during the last century, the Forties and the Eighties until our days. The recent was characterized by its space magnitude, its intensity and its major and significant impact which is the reduction in the water resources and reduction of cereals farming production. Accordingly, we will propose to study the rainfall data and cereals farming production observed in the Western of Algeria. Therefore to establish the drought characteristics and to study the consequences of rainfall reduction on cereals farming production.

This study was based on the analysis of rainfall data and those of the cereals farming production observed in the west of Algeria.

The choice of 23 pluviometric stations is based on the historical study. These stations which have been operating since 1968, cover all the space of the west regional Algeria. The results provided by the principal components analysis, to develop a regional groups of our studied zone, show a good space coherence between the stations. We note the existence of three distinct regional groups, formed by a group of stations having a similar behavior. This analysis showed a succession of two phases : a long rainy episode which extended between the beginning of the Fifties and the end of the Seventies; and a poor period which has started at the beginning of the Eighties and persists until now. The winter rains, during the last period, generally knew a fall for the three standard stations (Mascara, Maghnia and Sougeur), whereas the spring rains became higher during the two last decades. The study of the dry and rainy sequences by the the MARKOV chains, showed that the dry sequences have an average length which increases with the threshold grows. The seasonal distribution of these sequences is in relation with the cereals farming production. The representation of the chronology of the series of cereals farming production shows the rise of it's tendency. From our opinion, this tendency is due to the progress in farming techniques. After the correction of this anthropic tendency, we analyzed the relation yield-rain. This confirms the production fall and shows its connecting with precipitations.

The analysis of the minimal and maximum temperature permitted to detect an increase in both the minimas and maximas at Oran's station during the two last decades. This tendency of the temperature generated an acceleration of the evapotranspiration which is accompanied

by a lack of water in the ground. The rain reduction associated with the considerable temperature increase, during the two last decades, influenced the cereal yields.